AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Currently Amended) A method for measuring thickness of one or more layers of an optical disc that includes a spacer layer and a cover layer by using an interference effect of an optical disc layer, the method comprising the steps of:

detecting an intensity of a reflective light according to a plurality of wavelengths~~wavelength of a light~~ as a first spectrum of data ~~for each wavelength~~;

converting the ~~detected~~ first spectrum data ~~for each wavelength~~ into a second spectrum ~~value~~ of values that exhibits variation as a function ~~of a~~ wavelength and a refractive index;

transforming the second spectrum using a Fast Fourier Transform; and

detecting ~~a position where the intensity of the reflective light has a peak as a~~ thickness of one or more of ~~a~~ the spacer layer and ~~a~~ the cover ~~layer~~ layer, respectively, based upon the transformed spectrum. ~~by converting the converted value into a length of an interference area for representing a layer thickness of the optical disc by the Fast Fourier Transform.~~

2. (Currently Amended) The method of claim 1, wherein in said converting step, the second spectrum is ~~value as~~ a function of ~~a wavelength has a refractive index of~~ $n(\lambda)/2\lambda$, where n is the index of refraction and λ is wavelength.

3. (Currently Amended) The method of claim 1, wherein the ~~optical disc layer comprises~~ the spacer layer has~~with~~ a refractive index n_1 and the cover layer ~~with~~ has a refractive index n_2 different from the refractive index n1.

4. (Currently Amended) The method of claim 3, wherein peak values of intensity of the transformed spectrum at ~~respective~~ positions d_1 and d_2 ~~where the intensity of the light obtained by reflecting the refractive index into a function of a wavelength become a peak value are obtained as~~indicate d_1 and d_2 as being the thicknesses of respective layers.

5. (Currently Amended) The method of claim 1, wherein in said converting step, an equation for processing the first spectrum ~~that the refractive index is reflected into the function of wavelength~~ is expressed as following:

$$2n(\lambda)d = m\lambda$$

$$2n(\lambda + \Delta\lambda)d = (m-1)(\lambda + \Delta\lambda)$$

wherein, d is a thickness, n is a refractive index of the optical disc layer, λ is wavelength, and m is integer value.

6. (Previously Canceled)

7. (New) The method of claim 1, wherein the transformed spectrum represents intensity as a function of a length (d) of an interference area, and the length d further represents a thickness of a given layer.

8. (New) The method of claim 1, wherein the second spectrum varies as a function of a first factor that is the index of refraction and a separate second factor that is the wavelength.

9. (New) The method of claim 8, wherein the second spectrum varies as a function of the following equation,

$$n/b\lambda$$

where λ is the wavelength and is the second factor,

where n is the index of refraction and is the first factor and is itself a function of λ, and

where b is an integer.

10. (New) A method for measuring thickness of one or more layers of an optical disc by using an interference effect, the method comprising:

measuring intensities of reflected light according to a plurality of wavelengths and providing the same as a first set of intensities that vary as a function of wavelength;

converting the first set into a second set of intensities that varies as a function of the index of refraction as well as the wavelength;

frequency-transforming the second set; and

determining a thickness of one or more layers of the optical disc based upon the transformed set.

11. (New) The method of claim 10, wherein the second spectrum varies as a function of a first factor that is the index of refraction and a separate second factor that is the wavelength.

12. (New) The method of claim 11, wherein the second spectrum varies as a function of the following equation,

$$n/b\lambda$$

where λ is the wavelength and is the second factor,

where n is the index of refraction and is the first factor and is itself a function of λ, and

where b is an integer.

13. (New) The method of claim 1, wherein, for said converting step, the refractive index is dependent on wavelength.

14. (New) The method of claim 10, wherein, for said converting step, the refractive index is dependent on wavelength.

<remainder of page intentionally left blank>